

WHAT IS CLAIMED IS:

1. An electron beam exposure apparatus for exposing a wafer by an electron beam, comprising:

a deflecting section including a deflecting electrode for deflecting the electron beam;

a control section for outputting a control signal for controlling said deflecting section;

a load circuit having substantially the same impedance as that of said deflecting section; and

a switching section for switching a destination of the control signal between said deflecting section and said load circuit, wherein

a wire length between said control section and said load circuit is shorter than a wire length between said control section and said deflecting electrode.

2. The electron beam exposure apparatus as claimed in claim 1, wherein said control section synchronizes timing at which said control section activates said control signal with timing at which said deflecting section is to deflect the electron beam, the control signal being supplied to said load circuit by said switching section.

3. The electron beam exposure apparatus as claimed in claim 2, wherein said control section adjusts timing of exposing the wafer by the electron beam by synchronizing the timing of activating the control signal with the timing at which said deflecting section is to deflect the electron beam.

4. The electron beam exposure apparatus as claimed in claim

2, wherein said control section adjusts timing of blocking the electron beam being irradiated on the wafer by synchronizing the timing of activating the control signal with the timing at which said deflecting section is to deflect the electron beam.

5. The electron beam exposure apparatus as claimed in claim 2, wherein said control section adjusts the timing of irradiating the electron beam on the wafer by synchronizing timing of deactivating the control signal with timing at which said deflecting section is to stop the deflection of the electron beam.

6. The electron beam exposure apparatus as claimed in claim 2, further comprising a temperature detector for detecting temperature of said control section, wherein

said control section supplies the control signal to said load circuit and synchronizes the timing of activating the control signal with the timing at which said deflecting section is to deflect the electron beam when a temperature change detected by said temperature detector is more than a predetermined value.

7. The electron beam exposure apparatus as claimed in claim 2, wherein said control section supplies the control signal to said load circuit and synchronizes the timing of activating the control signal with the timing at which said deflecting section is to deflect the electron beam in a predetermined time interval.

8. The electron beam exposure apparatus as claimed in claim 2, wherein said control section supplies the control signal to said load circuit and synchronizes the timing of activating the control signal with the timing at which said deflecting section is to deflect the electron beam during startup of said electron

beam exposure apparatus.

9. The electron beam exposure apparatus as claimed in claim 1, wherein said control section comprises:

a driver for activating the control signal; and

a comparing section connecting with said driver for comparing electric potential of the control signal activated by said driver with predetermined reference electric potential.

10. A calibration method for calibrating an electron beam exposure apparatus including a deflecting section having a deflecting electrode for deflecting an electron beam, and exposing a wafer by the electron beam, the method comprising steps of:

supplying a control signal for controlling the deflecting section to a load circuit; and

synchronizing timing of activating the control signal with timing at which the deflecting section is to deflect the electron beam, wherein

the load circuit has substantially the same impedance as that of the deflecting section, and

a wire length between the control section, which controls the deflecting section, and the load circuit is shorter than a wire length between the control section and the deflecting electrode.

11. The calibration method for calibrating the electron beam exposure apparatus as claimed in claim 10, further comprising a step of adjusting impedance of the load circuit with that of the deflecting section when at least one of the parts of the deflecting section is replaced.

12. A semiconductor element manufacturing method for exposing a pattern on a wafer by an electron beam, and manufacturing a semiconductor element using an electron beam exposure apparatus including a deflecting section having a deflecting electrode for deflecting the electron beam, the semiconductor element manufacturing method comprising steps of:

supplying a control signal for controlling the deflecting section to a load circuit;

synchronizing timing of activating the control signal with timing at which the deflecting section is to deflect the electron beam by adjusting the timing of activating the control signal; and

supplying the control signal, of which the timing of activation is adjusted, to the deflecting section and exposing the wafer, wherein

the load circuit has substantially the same impedance as that of the deflecting section, and

a wire length between the control section, which controls the deflecting section, and the load circuit is shorter than a wire length between the control section and the deflecting electrode, and

the deflecting section switches whether the electron beam is to be deflected or not according to the control signal in said wafer exposing step.